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Date 2/23/07 Serial # 091849,537 Priority Application Date 5/7/01
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Claims 13, 16, 17, 52, 59, & 69-71

BGA & Heat Spreader

Problem: See pages 2 & 3
Solution: 1, 1, 3 & 4

2008/0079579
6,583,513

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Set	Items	Description
S1	716	AU='ZHAO, S' FROM 2, 6, 8, 14, 25, 31, 33, 34, 35, 36, 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99, 103, 104, 118, 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23
S2	2	AU='ZHAO, SAM Z.':AU='ZHAO, SAM ZIQUN' FROM 2, 6, 8, 14, 25, 31, 33, 34, 35, 36, 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99, 103, 104, 118, 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23
S3	1	AU='ZHAO SAM Z' FROM 2, 6, 8, 14, 25, 31, 33, 34, 35, 36, 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99, 103, 104, 118, 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23
S4	1113	AU='ZHAO S' FROM 2, 6, 8, 14, 25, 31, 33, 34, 35, 36, 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99, 103, 104, 118, 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23
S5	6	AU='BACHER, B.':AU='BACHER, BRENT' FROM 2, 6, 8, 14, 25, 31, 33, 34, 35, 36, 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99, 103, 104, 118, 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23
S6	13	AU='BACHER B':AU='BACHER B J' FROM 2, 6, 8, 14, 25, 31, 33, 34, 35, 36, 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99, 103, 104, 118, 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23

S7 6 AU='UTAGIKAR A':AU='UTAGIKAR, A.' FROM 2, 6, 8, 14, 25, 31,
 33, 34, 35, 36, 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99,
 103, 104, 118, 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23
 S8 2 AU='CHONG NUM KWEE' FROM 2, 6, 8, 14, 25, 31, 33, 34, 35, 36,
 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99, 103, 104, 118,
 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23
 S9 52 AU='CHONG N' OR AU='CHONG N K' FROM 2, 6, 8, 14, 25, 31, 33,
 34, 35, 36, 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99, 103,
 104, 118, 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23
 S10 68 AU='CHONG, N' OR AU='CHONG, N.' FROM 2, 6, 8, 14, 25, 31, 33,
 34, 35, 36, 46, 56, 57, 60, 61, 63, 64, 65, 68, 81, 87, 94, 95, 96, 99, 103,
 104, 118, 134, 144, 239, 240, 248, 293, 315, 323, 335, 434, 23
 S11 17 S S2:S3 OR S5 OR S7:S8
 S12 12 RD (unique items)
 S13 1976 S S1:S10
 S14 1 S S13 AND (FLIP () CHIP OR SOLDER)



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#3 (khan r.<in>au) and chip

#4 (khan r.<in>au)

#5 (zhao s. z.<in>au)

#6 (zhao s.<in>au)

#7 (zhao s.<in>au) and chip

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#3	((bga<in>metadata) <and>stiffener)<and>heat spreader	16
#4	((flip chip<in>metadata) <and>stiffener)<and>heat spreader	19
#5	((bga<in>metadata) <and>stiffener)<and>heat slug	1
#6	((bga<in>metadata) <and>stiffener)<and>heat dissipat*	7
#7	((flip chip<in>metadata) <and>stiffener)<and>heat slug	1
#8	((flip chip<in>metadata) <and> (stiffener<in>metadata)) <and> (heat slug<in>metadata)	0
#9	((flip chip<in>metadata) <and>stiffener)<and>heat dissipat*	9



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L3	112	2 and heat adj spread\$3	EPO; JPO; DERWENT	OR	ON	2007/03/01 15:20
L4	208	(ball adj grid bga) and heat adj spread\$3	EPO; JPO; DERWENT	OR	ON	2007/03/01 15:49
L5	171	4 not 3	EPO; JPO; DERWENT	OR	ON	2007/03/01 16:30
L6	680	(ball adj grid bga flip adj chip) and heat adj (slug dissipat\$4)	EPO; JPO; DERWENT	OR	ON	2007/03/01 15:50
L7	26	(ball adj grid bga flip adj chip) and heat adj slug	EPO; JPO; DERWENT	OR	ON	2007/03/01 15:50
L8	25	7 not (3 5)	EPO; JPO; DERWENT	OR	ON	2007/03/01 15:50
L9	231	(ball adj grid bga flip adj chip) and stiffener	EPO; JPO; DERWENT	OR	ON	2007/03/01 15:51
L10	13	6 and stiffener	EPO; JPO; DERWENT	OR	ON	2007/03/01 15:51
L11	34	5 and (stiffen\$3 stiff rigid\$3 planar\$3)	EPO; JPO; DERWENT	OR	ON	2007/03/01 16:31
L12	33	11 not 10	EPO; JPO; DERWENT	OR	ON	2007/03/01 16:31